PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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Peace/Williston Fish and Wildlife Compensation Program Annual Report 2007/08

M.D. Wood and B.G. Blackman

June 2008

PWFWCP Report No. 320

The Peace/Williston Fish & Wildlife Compensation Program is a co-operative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

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PEACE /WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM

ANNUAL REPORT 2007/08

POLICY COMMITTEE:
David Facey (BC Hydro)
Rebecca Reid (Dept. of Fisheries and Oceans)
Nancy Wilkin (Ministry of Environment)

STEERING COMMITTEE:
Kevin Conlin (BC Hydro) – Chair
Debbie Beattie (Public Member)
Deb Bisson (BC Hydro)
Don Cadden (Ministry of Environment)
Ted Down (Ministry of Environment)
Mike Nash (Public Member)

PROGRAM MANAGER:
Deb Bisson (BC Hydro)

PUBLIC RELATIONS:
Dave Conway (BC Hydro)
Bob Gammer (BC Hydro)
Cam McAlpine (BC Hydro)

FISH TECHNICAL COMMITTEE:

Ray Pillipow (MoE, Prince George) - Chair
Gerry Leering (MoE, Fort St. John)
Pete Scales (BCH, Hudson's Hope)
David Wilson (BCH, Burnaby)

WILDLIFE TECHNICAL COMMITTEE:

Pete Scales (BCH, Hudson's Hope) – Chair
Doug Heard (MoE, Prince George)
Ed Hill (BCH, Burnaby)
Conrad Thiessen (MoE, Fort St. John)

FISH BIOLOGISTS:

Brian Blackman (BCH) - Senior Biologist
Arne Langston (BCH)
Randy Zemlak (BCH)

WILDLIFE BIOLOGISTS:

Mari Wood (BCH) - Senior Biologist
Fraser Corbould (BCH)

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ACRONYMS

PWFWCP

BCH	B.C. Hydro
CCI	Community Consultation and Information
CR	Community Relations
ESIM	Environmental and Social Issues Manager
ETS	Environmental Technical Specialist
FTC	Fish Technical Committee
FTR	Full-Time Regular
FTT	Full-Time Temporary
MoE	Ministry of Environment
NRS	Natural Resource Specialist
PC	Policy Committee
PST	Planning, Safety and Training
PWAC	Peace/Williston Advisory Committee
PWFWCP	Peace/Williston Fish and Wildlife Compensation Program
SC	Steering Committee
SIP	Strategic Implementation Plan
SWP	Safe Work Procedures
TC	Technical Committee
WLR	Water License Requirements
WTC	Wildlife Technical Committee
WUP	Water Use Planning

STAKEHOLDERS and PROJECT COLLABORATORS

ABIT	Abitibi Consolidated
BCTA	BC Trappers Association
BCWF	BC Wildlife Federation
CANFOR	Canadian Forest Products Ltd.
CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans
FFS	Freshwater Fisheries Society
FRBC	Forest Renewal BC
FWCP (CB)	Fish and Wildlife Compensation Program- Columbia Basin
GOABC	Guide-Outfitters Association of BC
HCTF	Habitat Conservation Trust Fund
HHRG	Hudson's Hope Rod and Gun Club
LCHH	Lions Club of Hudson's Hope
MFGA	Mackenzie Fish and Game Association
MNO	Mackenzie Nature Observatory
MoF	Ministry of Forests
TKD	Tsay Keh Dene Band
WII	Wildlife Infometrics Inc.
WSSBC	Wild Sheep Society of BC
WSC	Water survey of Canada
UBC	University of British Columbia
UNBC	University of Northern British Columbia

ADMINISTRATION

Program Staff and Committees

Membership on the Steering Committee (SC) changed with the addition of Deb Bisson to the SC early in the year. Deb Bisson (BC Hydro's Environmental and Social Issues Manager, ESIM, in Hudson's Hope) remained as the administrative supervisor for PWFWCP staff. A new initiative was undertaken in 07/08 to include representatives from the public and First Nations (FN's) on the SC, in addition to BCH and MoE members. To that end, two new public members were added to the SC in the fall of 2007: Debbie Beattie from Hudson's Hope and Mike Nash from Prince George. Local First Nations indicated a desire for broader representation within the program and discussions surrounding how best to involve FN's continued with the SC throughout the year. Kevin Conlin (BCH) continued on as SC chair for 07/08.

Membership on the Wildlife Technical Committee (WTC) remained the same as the previous fiscal, but the role of chair was turned over from Doug Heard (MoE) to Pete Scales (BCH). The Fish Technical Committee (FTC) membership remained the same and Ray Pillipow (MoE) continued serving as chair.

Senior fish biologist Brian Blackman (NRS 3), fish biologists Arne Langston (NRS 3) and Randy Zemlak (NRS 2), senior wildlife biologist Mari Wood (NRS 3) and wildlife biologist Fraser Corbould (NRS 2) continued as Full-Time Regular (FTR) staff responsible for administering, managing, and conducting fish and wildlife projects and activities. All FTR staff completed annual Performance Plans and participated in mid-year and final performance reviews with the Program Manager Deb Bisson.

Peter Hehl, Ronald Laurentin and Felicia Juelfs were hired for 3, 2 and 1 month Full Time Temporary (FTT) terms respectively in the summer of 2007 to complete habitat assessment work on the Donna Creek project. Felicia Juelfs was hired again in January 2008 for a 6-month FTT term to assist the Wildlife Program with the Donna Creek project and other reports. The FTT hires required FTR wildlife staff to address several administrative issues including drafting job descriptions and duties, selecting candidates, addressing timesheets and personnel issues, completing payment requisitions, completing hiring and termination paperwork, and conducting new employee introductory training.

Financial Tracking

Financial accounting conducted by program staff included monthly tracking of finances, monthly reporting on large expenditures for BCH, summarization of expenditures for Quarterly Reports, completion of fiscal year-end accounting (for Fish, Wildlife, Community Consultation and SC Planning activities), summarization of expenditures for Annual Report, and development of new fiscal work orders and financial tracking systems. Mari Wood also completed a detailed review of all Community Consultation and Information (CCI) expenditures to determine SC/FN's planning meeting expenditures for 07/08, and implemented a formal budget for the same activities for 08/09.

Office Location

The PWFWCP office on the 3rd floor of 1011 Fourth Ave in Prince George was moved to a new location on the same floor in February 2008. The move accommodated a BC government plan to re-organize the office space and followed all requirements in the April 2006 PWFWCP and MoE "Licence Agreement". Staff participation in the office move included attending meetings with ministry representatives to discuss office space plans and re-organization, packing and dismantling original offices, assisting with the move and re-organization into the new space, completing office unpacking and storage room set-up, and investigating and ordering office furniture. An

amendment of the current License Agreement with MoE to include the new office location space plan and additional warehouse space was completed; the warehouse was also partially re-organized as a result. The long-term potential for re-location of the PWFWCP office to the 18th Avenue MoE building was also investigated.

PLANNING, SAFETY, AND TRAINING

Planning

Steering Committee

The SC held two program meetings in Prince George in October 2007 and March 2008. The October meeting was attended by all SC and TC members, program staff, and representatives from various First Nations in the watershed. Staff gave presentations on Fish and Wildlife activities for the benefit of the First Nations representatives and the two new public SC Members. The new program direction and involvement of First Nations in the program were also discussed. TC chairs and senior biologists from the Fish and Wildlife programs attended the March SC meeting and presented their respective 08/09 budgets. A project proposal was also submitted by West Moberly First Nations. SC directed the WTC to work together with WMFN in the new fiscal year to try and develop a cooperative project proposal. The First Nations representatives also held a two day elders gathering and internal caucus with their members in November 2007 to discuss membership on the SC and potential changes to the original MOU for the Program.

As a result of the October SC meeting, staff prepared a number of documents for the SC and First Nations including:

- spreadsheet detailing PWFWCP-FN interactions since program inception.
- financial summaries of the annual expenditures for all fish and wildlife projects conducted since the Program's inception,
- written summaries on the objectives, methods, timeframe and status for each fish and wildlife project conducted since Program's inception, and
- summary of FN's hiring history in 07/08.

Every five years, the PWFWCP is reviewed by its partners to ensure that the program is working effectively and meeting its mandate. The most recent review was completed at the end of 2007 and the final recommendations are still being finalized. All program staff, in addition to several TC and SC members, participated in interviews and questionnaires for the 5-Year Program Review. The review was completed, and findings are expected to be released early in 08/09.

Mari Wood also completed a review of program finances and provided a financial budget system to cover SC/FN's meetings for 08/09, and completed a new "Planning and Administration" budget and task forms to cover annual SC tasks.

Strategic Planning

Over the past two years the PWFWCP has started a comprehensive planning initiative to establish a more strategic approach to the projects it undertakes. A Strategic Planning Workshop was held in Prince George in late May 2007. The workshop was facilitated by a consultant and attended by all SC and TC members and program staff. The objective of the two day meeting was to discuss the approach and development of Strategic Implementation Plans (SIP's).

At their October 2007 meeting, the Fish Program (FTC members and staff fish biologists) determined that SIP's were required for Bull Trout, Arctic Grayling, Kokanee, Dinosaur Reservoir, and Williston Reservoir. The draft Bull Trout SIP was revised and submitted to the Strategic Planning consultant for review. Review comments indicated that additional changes were required and a decision was made to have the consultant re-draft the SIP incorporating the content desired by the SC. Upon completion of this task in 08/09, the Fish Program will incorporate projects, time, and cost requirements. Analytical methodology for fish species prioritization was submitted to another consultant for review and comment.

The Wildlife Program (WTC members and staff wildlife biologists) met in October 2007 to address completion of the Wildlife Strategic Plan and identify SIP topics. Pete Scales (TC Chair) drafted the Wildlife Strategic Plan by January and it was subsequently reviewed by the remaining WTC members. Staff developed a draft Priority Species ranking matrix with weighing system to assist in determining a list of required SIP's. The draft was reviewed by the WTC and then presented to First Nations representatives on a December 2007 conference call and a February 2008 in-person meeting.

Annual Program Planning

The Fish Program held its annual "technical" session in May 2007 and two additional budget meetings (October in Vancouver, November in Prince George) to discuss the current year's projects and finances and prepare the 08/09 budget. Staff developed detailed project proposals, the draft Fish Budget for submission to the SC, addressed SC comments, and prepared and submitted the final Fish Budget package.

The Wildlife Program held a conference call in November 2007 and an in-person budget meeting in February 2008 to develop the 08/09 budget. Staff prepared task forms for continuing projects and summaries of proposed new projects for review at the meetings. Staff prepared the draft and final versions of the Wildlife Budget incorporating changes requested by the SC. Wildlife staff also submitted a request to the SC for clarification on an interpretation of the Program mandate relating to projects that address wildlife concerns caused by human impacts.

Workshops and Conferences

Staff attended several workshops in 07/08 including:

- BCH Environment Summit and ESI Symposium, New Westminster (Blackman, Wood, Corbould),
- 43rd Annual North American Moose Conference, Prince George (Wood, Corbould),
- College of Applied Biology and Association of Professional Biologists AGM, Victoria (Wood),
- Caribou Recovery Workshop, Prince George (Wood),
- MoE Wild/Domestic Sheep Workshop, Kamloops (Wood),
- BCH's Large Rivers Indexing meeting (Blackman), and
- BC Trappers Association Convention (Corbould).

Safety

Program staff participated in monthly safety meetings with the Program Manager and BCH's COSH (Coordinator of Occupational Safety and Health). Staff provided feedback to the Program Manager regarding safety initiatives that have been conducted by the program, and prepared a presentation for the November 2007 safety meeting on safety "near-misses" since the program's inception. Wood and Corbould also participated in a BCH Safety Audit phone interview. Safe Written Work Plans were developed for the following topics: working in Water Survey Canada's river crossing aerial trolleys, jet-boat procedures, and small boats on lakes. The Safety Training

Requirements spreadsheet was updated to include relevant Acts, Regulations, and OSH standards. The PWFWCP warehouse space was cleaned up and re-organized. Various other safety-related issues were addressed including improvements to the safety check-in system, investigation and purchase of Iridium satellite phones, and updating of First Aid kits. Langston also attended meetings of the 3rd floor Joint Committee of Occupational Safety and Health on behalf of PWFWCP.

Safety training courses completed by staff in 07/08 included:

- Driver Review Training (all staff),
- Violence in Workplace Prevention (Wood, Corbould, Langston, Zemlak),
- BC Hydro Work Protection Practices (WPP) local components for GMS and Peace Canyon (Langston, Zemlak),
- Level 1 First Aid and Spinal Immobilization (Corbould, Blackman, Langston, Zemlak),
- Wilderness First-Aid (Blackman, Langston, Zemlak),
- Swiftwater Rescue Training (Blackman),
- Marine Emergency Duties A3 (Blackman, Langston, Zemlak),
- Small Vessel Operator Proficiency Certification (Blackman, Langston, Zemlak), and
- Electrofishing re-certification (Blackman, Langston, Zemlak).

Training (Non-Safety)

Staff also participated in several non-safety training courses in 07/08 including:

- BCH's on-line Freedom of Information training (all staff),
- Statistical Methods course (Blackman, Zemlak),
- Statistical Trend Analysis course (Blackman, Langston, Zemlak),
- ArcGIS Tier 1.0 (Wood),
- ArcGIS Tier 2.0, 2.1 (Blackman, Corbould),
- ArcGIS Tier 3.3 (Langston),
- Leadership Development and Team Building course (Zemlak),
- Environmental Monitoring for Construction Projects (Langston),
- BCH's Large Rivers Indexing meeting (Blackman),
- MoE's Fisheries Program meeting (Blackman, Langston, Zemlak),
- College of Applied Biology AGM (Wood),
- Ethics Training (requirement of College of Applied Biology)(Wood), and
- Small Engine Troubleshooting/Repair course (Corbould, Blackman, Langston, Zemlak).

COMMUNITY CONSULTATION AND INFORMATION

Community Consultation

No formal public consultation activities were undertaken this year.

Information Dissemination

First Nations

Program Manager Deb Bisson and Brian Blackman met with a Treaty 8 Tribal Association representative and a staff member of Halfway River First Nations in June to discuss general program issues. Mari Wood and Doug Heard met with McLeod Lake Indian Band representatives to discuss the Parsnip Caribou Recovery Project and opportunities for involvement. Staff also met with First Nations throughout the year at the SC and TC meetings (see Planning). Staff met with

Dawn Farrell (BCH) in May to discuss PWFWCP projects, and past and future involvement of Tsay Keh Dene. A briefing note on PWFWCP activities was also prepared by staff prior to this meeting. As a result of the October SC meeting, staff prepared a number of documents for First Nations including:

- a spreadsheet detailing PWFWCP-FN interactions since the program's inception in 1989,
- a financial summary of annual project expenditures for all fish and wildlife projects conducted since the Program's inception,
- written summaries on the objectives, methods, timeframe and status for each fish and wildlife project conducted since Program's inception, and
- a summary of FN's hiring in 07/08.

Arne Langston discussed Kokanee impacts with TKD and Kwadacha council members and elders, and took band Chiefs on Kokanee enumeration flights in their respective areas. A member of the McLeod Lake Indian Band also participated in the Misinchinka River bull trout redd counts with fish staff. Significant efforts were made by staff throughout the year to hire local band members to participate in various projects. The PWFWCP's old outline display system used for presentations was donated to the local TKD band office.

Program Reporting

Program staff produced the 2006/07 Annual Report and 3 Quarterly Reports on 07/08 activities. The Fish Program also produced monthly reports on fish program activities. Arne Langston prepared a short briefing note on the PWFWCP highlighting a few specific projects for the BCH dam tour guides for summer 2007. The Annual Report and technical program reports were posted to the PWFWCP website (http://www.bchydro.com/pwcp/).

Presentations

Mari Wood attended a display booth and held a wildlife identification contest at the BC Wildlife Federation's (BCWF) AGM in Dawson Creek in April. Wood also attended the Wild Sheep Society of BC's (WSSBC) AGM in March in Kamloops and held a wildlife identification contest on the Friday evening which was sponsored by PWFWCP. Fraser Corbould attended the BC Trappers Association (BCTA) AGM in March in Vanderhoof and delivered a presentation on the Fisher Habitat Use Project. Wood and Corbould also attended a meeting of the Prince George Chapter of the BC Trappers Association and gave a presentation on the PWFWCP and the Fisher Project. Wildlife TC member Doug Heard prepared a poster on the Parsnip Caribou Recovery Trial for the 43rd NA Moose Conference in Prince George.

Arne Langston coordinated the 5th in a series of annual lectures sponsored by the PWFWCP at UNBC, where Dr. Don McPhail (Professor Emeritus at the University of British Columbia) lectured on "the Freshwater Fishes of BC: Past and Present". The lecture was preceded by a brief overview of the PWFWCP, and was followed by a "meet and greet session" with PWFWCP biologists at their display booth.

The PWFWCP and specific fish and wildlife projects were also discussed through informal meetings and talks with industry representatives, club members, guide outfitters, trappers, contractors, students, tourists, and other government agencies. Detailed project information and technical reports were also discussed with and disseminated to consultants, biologists and researchers.

Written Materials

The 16th issue of *Natureline* was drafted, with publishing scheduled for early in 08/09. This issue covers both the 06/07 and 07/08 fiscal years. Program staff provided project articles, project

updates, photographs, and financial expenditure information to Cam McAlpine with BCH Public Affairs and a mock-up was prepared by fiscal year-end. A press release was produced on the PWFWCP-sponsored UNBC Environmental Science lecture series. Public Affairs department placed advertisements on the PWFWCP in the 2007/08 Freshwater Fishing Regulations Synopsis and the 2007/08 Hunting and Trapping Regulations Synopsis. Mari Wood and Fraser Corbould prepared detailed project summaries for all wildlife projects conducted since the inception of the program to be posted on the website. Brian Blackman prepared fish project summaries for the first 10 years of the program with the remainder to be completed in 08/09.

Work continued on development of signs to promote program awareness and highlight wildlife viewing opportunities at the Mugaha Marsh, Dunlevy, and Dinosaur Reservoir sites. Program staff provided final feedback to Cam McAlpine and BCH designers regarding content and layout issues, and specific site placement. The signs will be created and erected in 08/09. The lack of directional signs to the Neilson Lake wildlife viewing site was discussed with local residents, MoF, and MoTH, and directional signs were re-established to alleviate the problem. PWFWCP Fish ID brochures, recent *Naturelines*, Fish and Wildlife Species booklets, and program brochures were distributed to various tourist booths, hotels, and government agents in the Program area.

Sponsorship/Donations

The District of Mackenzie Fire Department was awarded a $1,000 PWFWCP sponsorship in December for a "Mackenzie Family Ice Fishing Day". Fish staff participated in the February event; newspapers (Prince George Citizen and Mackenzie Times) and CHMM FM radio in Mackenzie provided coverage of the event noting PWFWCP as a key sponsor. Sponsorship was also provided in support of the BC Trappers Association 63rd AGM in Vanderhoof and the Wild Sheep Society of BC's 15th AGM in Kamloops. The 43rd North American Moose Conference and Workshop held in June 2007 in Prince George was also sponsored by the PWFWCP, but funding was provided from the previous fiscal year's budget (06/07). Funding was also provided for completion of the "Fish Species of BC" book, and for the UNBC lecture series presenter. Additional promotional items with the PWFWCP logo were produced including winter toques, coffee mugs and notepads.

Extension

Input to various planning processes and agencies regarding fish management issues and other research projects was provided by fish staff throughout the year including: 1) BCH's Water Licence Requirements (WLR) projects, 2) terms of reference for WLR project contracts, 3) overlap between WLR and PWFWCP fish projects, 4) demonstration embayment, reservoir hydro-acoustics and Dinosaur water use plans for BCH's WLR staff, 5) study design to evaluate impacts of coal mine development on Gething Creek for MoE, 6) mercury consumption by people for UNBC grad student, 7) Arctic grayling literature for MoE's new senior fish biologist, and 8) photos of spawning rainbow trout for DFO. The FTC also approved the UNBC Aquatic Legacy Fund to be awarded to Crystal McRae to conduct research on spawning site selection of northern interior coho salmon. The FTC felt that although this particular research project was not located within the Williston watershed, this study of redd site selection with respect to ground water sources would be applicable to redd site selection of bull trout in the Williston watershed.

Input to various planning processes and agencies regarding wildlife management issues and other research projects was provided by wildlife staff throughout the year including: 1) project design, objectives and monitoring for BCH's WUP wetland and tributary initiatives, 2) wildlife impacts from potential Peace Canyon spill for BCH, 3) moose deaths in Dinosaur reservoir log jam for BCH, 4) wildlife field activities for BCH presentation, 5) BCH species-at-risk and year-end reports, 6) fisher ecology and habitat mapping in relation to Old Growth Management Areas in the Mackenzie Forest District, 7) fisher WHA's for MoE, 8) spatial osprey nest site data around Williston Reservoir for

ILMB, 9) wildlife impacts related to potential Dunlevy golf course/resort development, 10) impacts on mountain goats of proposed mineral exploration in the Akie drainage, 11) wildlife impacts of Hudson's Hope ski hill for MoE, 12) wildlife values of Gething Creek for contractor, 13) wildlife surveys in Moberly drainage for contractor, 14) moose and winter tick deaths, 15) breeding birds in watersheds for BC Breeding Bird Atlas coordinator, 16) Sulphur 8 Mile Stone's sheep project in northeastern BC, 17) Nature Trust proposal to conduct inventory/enhancement work on properties originally purchased by PWFWCP, and 18) presentation on past central interior swan surveys for 21st Trumpeter Swan Society Conference.

Mari Wood attended and provided input to the GOABC-initiated Caribou Workshop in Prince George, the Region 7A Wildlife Management Process meeting, and the Region 7B/Northern Guides meeting. Wood was a member of the Organizing Committee for the 43rd NA Moose Conference held in Prince George June 2007. Wood also assisted the CO Service with the capture and relocation of a problem bear (former McLeod Lake Project bear).

FISH PROGRAM

By: Brian Blackman

2007/2008 Fish Field Project Locations

Map	Task#	Project	Location
1	07-01	Project Maintenance (WSC)	Parsnip
2	07-02	Stocking Program	Watershed
3	07-03	Small Lake Stocking Evaluations	Watershed
	07-04	Report Writing Previous Years	Office
5	07-05	Kokanee rearing Environmental Awareness(DFO, MNO, MFGA, FFS)	Watershed
6	07-06	Dinosaur Reservoir Habitat Improvements	Dinosaur
7	07-07	Dinosaur Reservoir Fish Assessment	Dinosaur
8	07-08	Parsnip Grayling Index	Parsnip
9	07-09	Brassy Minnow	Parsnip
10	07-10	Bull Trout Redd Count Index	Watershed
11	07-11	Kokanee Spawner Index Stream Surveys	Watershed
	07-12	Grayling Management and Recovery Plan (Funded Project – MoE)	Office
	07-13	UNBC Research Lecture Series(UNBC)	UNBC
14	07-14	Grayling Fry Distribution in the Finlay Watershed	Finlay
	07-15	Freshwater Fishes of BC Book (BCH, FWCP (CB), Fortis BC, HCTF, MoE)	Office
16	07-16	Foreshore Enhancement Project	Parsnip
17	07-17	Genetic Analysis of Arctic Grayling Population Structure (UNBC)	Watershed
18	07-18	Genetic Analysis of Kokanee Population Structure (DFO)	Watershed
19	07-19	Hydroacoustic Research and Development(MoE)	Reservoir
	07-20	Fish Species Distribution Maps (MoE)	Office
	07-21	Project Evaluation	Office
22	07-22	Gravel Hill Creek Habitat Enhancement Potential	Peace

Collaborators are listed in brackets following the project name.
"Funded Projects" are projects funded by the PWFWCP but administered and conducted by other agencies.

FISH PROJECT SUMMARIES

1. PROJECT MAINTENANCE (#07-01)

Project Objectives: To provide maintenance for the Dina Creek spawning habitat improvement project, and funding for the maintenance of water temperature sensors maintained by Water Survey of Canada.

2007/08 (Year 13 of ongoing): Annual maintenance was completed to prepare Dina Creek for rainbow trout spawning. Habitat complexing, spawning gravel addition and removal of beaver dams obstructing passage at the culvert on Dina Creek were completed. Project biologists led and participated in the Dina Creek Field Day, where local students learned about stream ecology. 2007 raw water temperature data from the 10 Water Survey of Canada stations was received and has been corrected and added to the water temperature data base. The Akie River station was lost during spring flooding and will have to be replaced next year. Quality assurance checks were undertaken for all stations. This project meets the Program Strategic Objectives of monitoring global warming, and public awareness and appreciation of northern ecosystems.

2. STOCKING PROGRAM (#07-02)

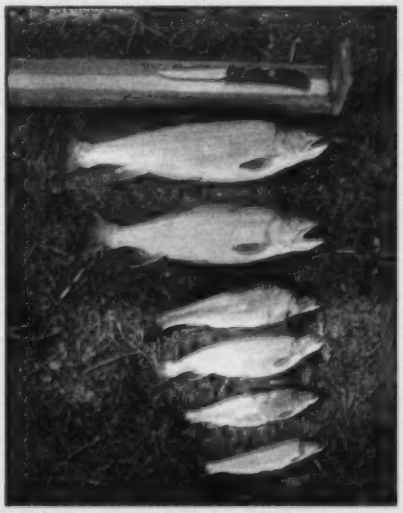
Project Objective: To provide funds to cover the costs to the Freshwater Fisheries Society for the rearing and release of fish into PWFWCP stocked lakes.

2007/08 (Year 19 of ongoing): This year fish releases into small lakes were, 2000 for Wright, 2500 for Butternut, 2000 for 43 Mile and 3000 for Lost lakes. Brood requests for 2009 were submitted. This project addresses the Program Strategic Objective of providing additional recreational opportunities.

3. SMALL LAKE STOCKING EVALUATIONS (#07-03)

Project Objectives: To evaluate the fish populations in small lakes stocked by PWFWCP, and ensure the goals of the stocking program are met. The 2007 objective was to evaluate native and introduced fish populations in Bruce, Pete and Simpson lakes.

2007/08 (Year 9 of ongoing): Bruce, Pete and Simpson lakes were evaluated in June and the reports have been completed and are awaiting review. Management objectives are being met in all three lakes, although the fish in Simpson Lake are getting smaller, so we are recommending removal of the "trophy" regulations. By evaluating the status of these stocked lakes we can adjust stocking regiments and recommend regulation changes to insure optimal use of the resource. This project meets the Program Strategic Objective of evaluating enhancement projects.



Brook trout from Bruce Lake are very healthy and support a good fishery.

4. REPORT WRITING PREVIOUS YEARS (#07-04)

Project Objective: To provide staff time and funds for the completion of reports from previous years and to have them placed on the Program website.

2007/08 (Year 9 of Ongoing): Reports completed and incorporated into the PWFWCP Report Series and placed on the website this year include:

No. 314 Arctic grayling (*Thymallus arcticus*) fry distribution surveys in the Nation River 2004. D.M. Cowie and B.G. Blackman October 2007. 26pp plus appendices.

No. 316 Recreational Fishery Stock Assessment of Dina Lake #7, 2005. R.J. Zemlak. February 2008. 9pp plus appendices.

No. 317 Assessing the origin of bull trout spawners in the Misinchinka River and the river's potential as a redd count index system: 2004 and 2005 radiotelemetry results. A.R. Langston and J.C. Cubberly. February 2008. 15pp plus appendices.

No. 318 Recreational Fishery Stock Assessment of Dina Lake #3, 2005. R.J. Zemlak. February 2008. 10pp plus appendices.

The report titled "Williston Reservoir Foreshore Enhancement Pilot Project Tony Creek 2005-2006" was completed and reviewed by the FTC. However, it was decided that due to the limited amount of data (all plots were inundated 3 weeks after fertilizer application) the report would not be added to the official PWFWCP Report Series, and instead a one-paragraph note would be added to the website. This project meets the Program Strategic Objective of sharing information.

5. KOKANEE REARING - ENVIRONMENTAL AWARENESS (#07-05)

Project Objective: To coordinate an educational program to raise kokanee in a classroom environment, in Mackenzie (two schools), Hudson's Hope, Chetwynd (two schools) Ft. St. John and the First Nations Community of Tsay Keh.

2007/08 (Year 11 of ongoing): This project was conducted in conjunction with the local School Districts, Fisheries and Oceans Canada and the Freshwater Fisheries Society of B.C. The Habitat Conservation Trust Fund, Mackenzie Nature Observatory, Mackenzie Fish and Game Association, Canfor Ltd., BC Hydro office at the W.A.C. Bennett Dam, Lions Club of Hudson's Hope, and the Hudson's Hope Rod and Gun Club were all partners in the initiation of the project. In May and June of 2007, kokanee reared in classrooms the previous winter were released into local streams. The release of the fry coincided with a one day field trip, to learn about ecology, and the event was covered by the local media. Art contest winners were selected and prizes awarded. In October, Clearwater Trout Hatchery (Freshwater Fisheries Society) provided 50 kokanee eggs per school. Program staff delivered the eggs to eight schools in Ft. St. John, Hudson's Hope, Chetwynd, Mackenzie and Baldonnel, as well as the First Nations Community of Tsay Keh and provided one hour (age appropriate) scientific presentations to 300 students this year. This project meets the Program Strategic Objective of encouraging the public to participate in program activities to increase public awareness of the program and general fisheries issues. This project is funded through the Community Consultation and Information budget allotment for the Program.

6. DINOSAUR RESERVOIR HABITAT IMPROVEMENTS (#07-06)

Project Objective: To improve shoreline rearing habitat for fish in Dinosaur Reservoir by the addition of cover in the form of woody structures.

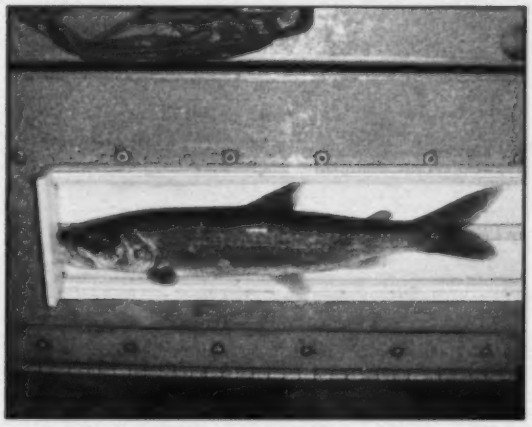
2007/08 (Year 5 of 8): 2007 was the sixth year of habitat improvements through the addition of woody structures along the shoreline. A number of structures from previous years required repairs (boom logs broke) and additional wood was added to all existing structures. Permits were acquired for fours new sites and 20 structures were added to three of the sites, enhancing an additional 200 meters of shoreline. A survey was conducted of the available littoral habitat in 2005 and 2006. Based on the survey it was estimated that an additional four km of shoreline can be enhanced with an additional 200 structures. To date 1.8 km of shoreline has been enhanced using 75 structures. This project is an integral part of the strategies outlined for Dinosaur Reservoir in the Dinosaur Reservoir Management Plan. These plan(s) emphasise habitat improvements to compensate for limitations on production as a result of construction of the Site One Dam, while at the same time maintaining or improving recreational opportunities without reliance on a stocking program if possible. This project meets the Program Strategic Objective to maintain biodiversity and recreational opportunities and to improve fish populations through the enhancement of existing habitat, particularly where potential losses can be attributed to the construction of the dams.

Large sound trees are cabled together and anchored to shore to create habitat improvement "structures" in Dinosaur Reservoir.

7. DINOSAUR RESERVOIR FISH ASSESSMENT (#07-07)

Project Objectives: To assess the status of the fish species in Dinosaur Reservoir and in particular to document the changes that may be the result of habitat enhancement or management actions.

2007/08 (Year 4 of ongoing): In July boat electrofishing was used to monitor fish population trends at 28 index sites. Mark recapture methods were used to estimate the numbers of fish using the littoral area of the reservoir. Recapture rates were 12% for rainbow trout. The numbers of kokanee and mountain whitefish were above average, while bull trout and peamouth chub numbers were lower. This project addresses the Program Strategic Objectives of monitoring changes in fish populations which may have resulted from habitat improvement projects or management actions.



Lake trout numbers appear to be dramatically increasing in Dinosaur Reservoir during the last few years.

8. PARSNIP ARCTIC GRAYLING POPULATION INDEX (#07-08)

Project Objectives: To monitor the Parsnip River Arctic grayling populations in order to determine trends and provide baseline data on which to evaluate enhancement and management actions.

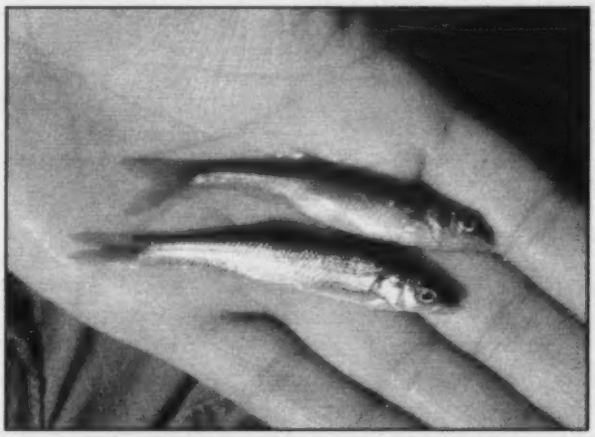
2007/08 (Ongoing - alternate years since 1998): Parsnip River seining index was completed in July and the number of young of the year grayling was below average but the number of one year old grayling was the highest recorded to date. Overall the number grayling in the index section of the Parsnip River has been remarkably stable. Underwater snorkel counts on the Table and Anzac rivers were conducted in early August. Only 11 of the 18 index swims could be completed because heavy rains resulted in poor underwater visibility. Based on the counts, grayling numbers in the Table River do not seem to have changed since 1995. Counts in the Anzac River have been more variable but there is no noticeable trend.

Three swimmers and a boat tender are used to count fish in the Anzac River.

9. BRASSY MINNOW DISTRIBUTION STUDY (#07-09)

Project Objectives: To verify the presence of brassy minnows and collect biological data on this species in the southern portion of Williston watershed. This updated distribution information will then be available to ensure proper species review status with respect to COSEWIC and the Conservation Data Centre.

2007/08 (Year 2 of 4): Electrofishing surveys and minnow trapping in the Crooked River drainage did not locate any Brassy minnows. Minnow traps were also used at Bear, Hart and Hubble lakes and various locations around Summit Lake. This year brassy minnows were only captured from Hart Lake. This project meets objective of conserving fish species and their habitat.



Brassy Minnow (top) and Lake Chub (bottom) captured from Hart Lake.

10. Bull Trout Redd Count Indexing (#07-10)

Project Objective: To monitor and compare bull trout redd counts at strategic index sites in order to determine population trends with the intent of enabling input into management, protection, and enhancement plans for Williston Reservoir bull trout.

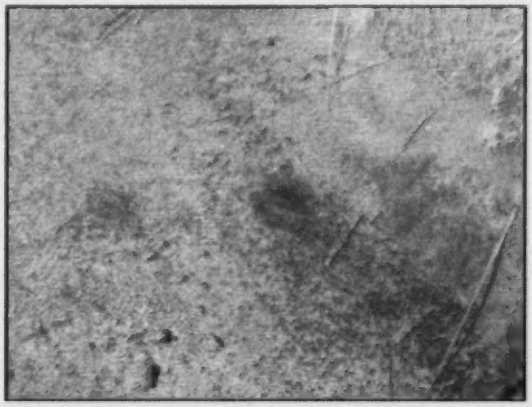
2007/08 (Year 5 of 5) Redd counts on Davis River (Finlay Reach), Misinchinka River (Parsnip Reach) and Point Creek (Peace Reach) were completed in September 2007. A site on Scott Creek was also identified for inclusion in 2008. In October the two potential spawning streams entering Dinosaur Reservoir were surveyed and redds were identified in Gething Creek. This information will be added to that collected in previous years in order to provide long term population trend data. This project meets the Program Strategic Objective to evaluate the status of fish and their habitat.

Bull trout redd in the Misinchinka River. Note area of clean gravel evident for about 2 weeks after spawning.

11. Kokanee Spawner Index Steam Surveys (#07-11)

Project Objectives: To collect biological data and monitor trends in the kokanee population by conducting aerial counts on selected index streams.

2007/08 (Year 1 of 5): In 2006 there was a dramatic increase in the numbers and distribution of kokanee spawners with 1,000,000 spawners, up from 193,000 fish in 2005. In 2007 the spawner count survey was scaled back to a selected group of 10 "index" streams: Hydro Creek, Germansen, Osilinka, Clearwater and Manson Rivers, 3 Finlay River tributaries, and 2 Ingenika River tributaries. In 2007, there were 360,000 kokanee counted in these systems, which represents a decline of nearly 30% from the 2006 counts. However counts were up in some of the streams and down in others. We anticipate numbers will continue to be highly variable for a number of years while this species continues to colonize new areas. This project meets the Program Strategic Objective to evaluate the status of fish and their habitat and to evaluate enhancement projects.

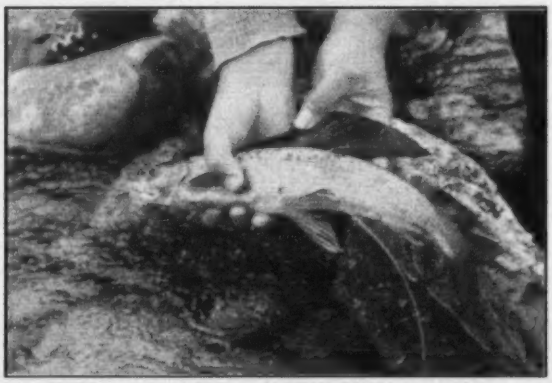


Kokanee spawners in Stelkuz Creek, September 2007.

12. ARCTIC GRAYLING MANAGEMENT AND RECOVERY PLAN (#07-12)

Project Objectives: To provide an acceptable framework for a "recovery" plan for Arctic grayling in the watershed aimed at protecting and enhancing the remaining stocks or habitats, and to conceivably reintroduce stocks back into areas where they have been extirpated.

2007/08 (Year 5 of ongoing): No workshops were held in 2007. MoE staff have been working on this plan internally. This project meets the strategic objective to evaluate the status of fish and their habitat.



Studies on Arctic Grayling identified that individual fish use multiple river systems, making development of a management plan for the species more complex. This grayling, radio-tagged in September 1996 in the Anzac River, migrated 55 km downstream to over-winter in the Parsnip River, spawned the next June in the Table River, then returned to the Anzac River that September.

13. UNBC RESEARCH LECTURE SERIES (#07-13)

Project Objective: To support an annual lecture at UNBC to promote research on Northern Aquatic ecosystems, raise awareness of the PWFWCP and the PWFWCP funded annual UNBC Aquatic Research Award.

2007/08. (Year 5 of ongoing): Dr. D. McPhail (UBC) presented a lecture in March 2008. The lecture was preceded by a brief overview of the PWFWCP and was followed by a "meet and greet session" with a Program display and biologists available to answer questions. Media coverage was provided by CBC television, local radio stations, and newspapers. This project is funded through the Community Consultation and Information component of the Program. This project meets the Program Strategic Objective of sharing information, developing partnerships, and creating public and scientific community awareness and support of PWFWCP and for the "Aquatic Research Award".

14. DISTRIBUTION OF GRAYLING FRY IN THE FINLAY RIVER (#07-14)

Project Objectives: (1) To determine the distribution and relative abundance of Arctic grayling fry in Williston Reservoir tributary streams and to map potential spawning areas. Surveys were conducted in the Omineca in 2001, Osilinka in 2002, Ingenika in 2003, Nation in 2004 and the Parsnip River in 2005.

2007/08 (Year 2 of 3): In 2006 we surveyed the upper Finlay River and tributaries with the plan of surveying the lower river in the following year. Unfortunately manpower problems and weather conditions prevented us for completing all the remaining area in 2007. We did manage to sample 65 sites covering 6.7 km of shoreline, and 31 grayling fry were captured from 12 of the sites. We also captured 36 adult grayling at 8 sites for genetic samples. The low numbers of fry may have been because of the severe flooding that occurred in the spring of 2007. If time permits we may resample some of the more promising sites in 2008.

Typical electro-fishing site on the Finlay River. Grayling fry are most frequently found in slow flowing areas <20 cm deep, and usually in side and back channels of larger rivers.

15. FRESHWATER FISHES OF B.C. BOOK (#07-15)

Project Objective: To champion and coordinate the production of a book, which will be the most up to date and detailed reference for the identification of fish species of British Columbia. This book should become the standard for all professional biologists, field workers, and students. Coordinate the contributing partners involvement (funds), develop terms of reference for publications to three academic presses, and award the contract. Work with the authors to complete the book.

2007/08 (Year 4 of 4): Freshwater Fishes of BC by Dr. D. McPhail was completed and ready for distribution in the fall of 2007, nearly 7 years after the concept was initiated. The Habitat Conservation Trust Fund donated $30,000, BC Hydro Corporate Affairs $25,000, Fortis BC and Fish and Wildlife Compensation Program-Columbia Basin $10,000, Ministry of Environment $5,000 and our Community Consultation and Information program donated the final $13,500 to make up the total costs of $83,500. Staff arranged funding, and worked with the sponsors to develop text for promotion of the sponsors of the book. Staff provided editorial comments on the text and provided a point of contact for the University of Alberta Press. Staff arranged a special block purchase (books provided at production cost) of the books, one text book was donated to every BC high school, and University in BC. Local colleges, and First Nations Bands also received copies. This project addresses the strategic objectives of sharing information and developing partnerships

16. FORESHORE/EMBAYMENT ENHANCEMENT PILOT PROJECT (# 07-16)

Project Objectives: To provide richer more complex habitat for native fish species by promoting more vigorous plant growth in the foreshore areas of embayments. This pilot project will test the effects of fertilizer on vegetation development in the drawdown zone.

2007/08 (Year 1 of 5): This project was initiated in May 2005 with test plots set up in Tony Creek embayment (10 km north of Mackenzie) to test the effects of fertilizer on plant growth in the upper portion of the drawdown zone. Two concentrations of standard fertilizer (21-7-7) and one of struvite (provided by K Ashley) were set up in 4 different vegetation bands based on elevation, and existing vegetation was documented. However, water levels rose approximately two months earlier than normal in 2005 and covered the sites preventing assessment. The experiment was repeated in 2006 but water levels rose to 3 m above normal by July 1st. Fertilizer was not applied in 2007 due to another year of expected high water levels. This project addresses the Program mandate to enhance critical habitats to compensate for negative impacts resulting from the creation of the reservoir.

Ideal conditions: These flooded channels and associated vegetative cover provide exceptional rearing habitat for small fish. Healthy vegetation has established here in part because this area is protected by the causeway from waves and is not pounded by debris during fall storms.

A typical area that would be selected for treatment.

17. Genetic Analysis of Arctic Grayling Population Structure in the Williston Watershed (# 07-17)

Project Objectives: To characterize the population structure for grayling in major tributaries that flow into Williston Reservoir, by determining whether these populations are discrete stocks or if there is genetic exchange between systems, and to confirm the movement patterns identified in the elemental signatures project (04-20)

2006/07 (Year 2 of 2): Under the direction of Dr. J.M. Shrimpton (UNBC) genetic analysis using microsatellite markers was conducted in 2006 on 245 grayling genetic samples previously collected from 9 watershed streams. An additional 108 samples collected in 2006 and 2007 from the Finlay River were added to the data in 2007. The 2006 analysis indicated that the different streams have genetically distinct grayling populations and in most cases the differences were strongly associated with geographic distance. The report also indicated the stocks were distinct before the reservoir was formed. The 2007 analysis of the samples from the Finlay River indicates two groups, with fish captured upstream from the long canyon separated from those fish captured below and that Fox River grayling were distinctly differed from fish collected from the upper Finlay watershed. This project will provide information that will be used for the management of arctic grayling.

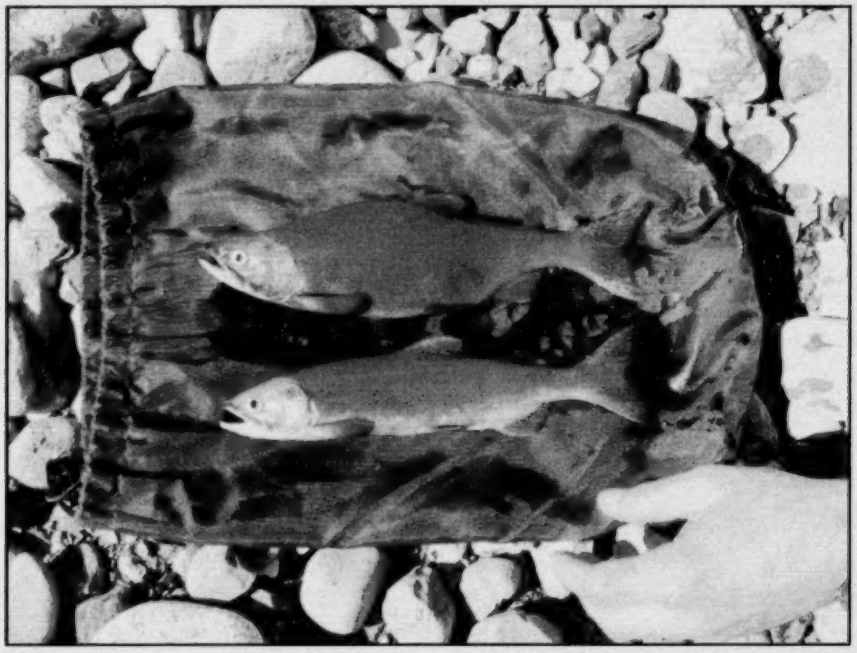
Some Finlay River grayling have orange rather than blue spots on their dorsal fin.

Possible barrier to upstream movement of grayling on the Finlay River

18. Genetic Analysis of Kokanee Population Structure in Williston Watershed (# 07-18)

Project Objectives: To determine the genetic makeup of the kokanee population of the watershed. Particularly, to differentiate the native stocks, (determine their origins and distribution) from the introduced populations from Columbia River hatchery stocks.

2007/08 (Year 2 of 2): The genetic analysis of the kokanee samples has been completed and an initial report received. The samples collected from the tributaries all appear to be descended from the introduced stock. There was no indication that the kokanee population from Thutade Lake was establishing in the lower Finlay River or other tributaries of the reservoir. This project will be extended for an additional two years to collect and analyze samples from Pacific/Portage lakes, Tacheeda and McLeod lakes (assumed to be native) to determine if a genetic refuge is required to protect the Arctic Lake stock from the expanding Williston populations. This project will address the strategic objective of contributing to the management of kokanee.



Kokanee spawners, male (top) and female (bottom), from Germansen River.

19. Hydroacoustic Research and Development (# 07-19)

Project Objectives: To test modified hydroacoustic equipment (specifically "upward looking sensors") and test the Williston Ranger for hydroacoustic and trawl netting work in preparation for hydroacoustic surveys planned for 2008.

2007/08 (Year 1 of 1): Application of the use of upward looking sensors were discussed with MOE experts. Results of research conducted in the United States suggest current technology is not feasible for Williston. Sideward looking sensor technology is being considered, but may not be applicable on Williston due to large waves. Further testing will occur in 2008/09.

20. Fish Species Distribution Maps (# 07-20)

Project Objectives: To query all the Provincial databases on each species to create a bibliography of capture information. Based on that information, create individual species distribution maps to show the distribution and relative abundance of each fish species.

2007/08 (Year 1 of 1): This project is being delivered by MoE and ILMB staff but the project has been delayed because of problems with database access. Expected completion date is June 2008.

21. Project Evaluation of Dinosaur Reservoir Woody Debris Additions (# 07-21)

Project Objectives: To evaluate how the project is contributing to the strategic objectives of the program and to identify possible ways of improving the delivery of similar projects in the future.

2007/08 (Year 2 of 2): A contract has been tendered and the final report is expected in April. This project addresses the strategic objective of program accountability and constant improvement of project delivery.

22. Gravel Hill Creek Habitat Enhancement Potential (# 07-22)

Project Objectives: To conduct a survey to identify the current fish and fish habitat in the stream and to identify and outline habitat enhancement options.

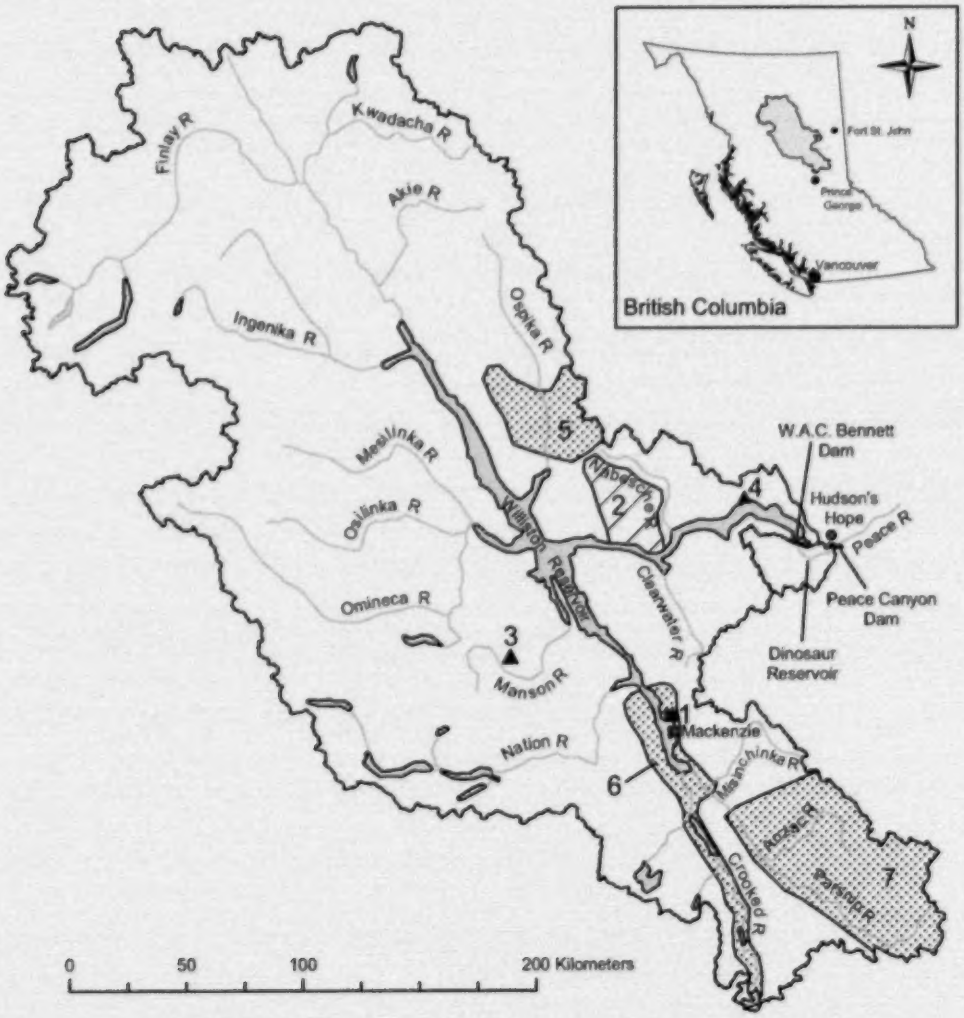
2007/08 (Year 1 of 1): The surveys were completed and outlined current fish use and habitat availability. A shortage of quality spawning habitat was identified as a factor limiting production, and a plan was developed to undertake habitat improvements that would provide additional spawning habitat. When completed this project will also raise public awareness of the PWFWCP with key stake holder groups (Williston Reservoir boaters and anglers at the Portage Mountain Yacht Club) and promote public awareness, appreciation and understanding of Northern aquatic ecosystems. This project will be delayed for one year because of funding shortages and staff time commitments.

Gravel Hill Creek where it enters the reservoir at the Portage Mountain Yacht Club.

WILDLIFE PROGRAM

By: Mari D. Wood

2007/08 WILDLIFE PROJECT LOCATIONS



Map	Task#	Project	Location
1	07-01	Mackenzie Migratory Songbird Monitoring (Funded Project – MNO, CWS)	Parsnip
2	07-02	Nabesche Goats & Licks	Peace
3	07-03	Donna Creek Forestry/Biodiversity (CANFOR)	Parsnip
4	07-04	Peace Arm Prescribed Burn (MoE, MoF)	Peace
5	07-05	Ospika Goat/Mineral Lick Project (CANFOR)	Finlay
6	07-06	Wetlands Enhancement Maintenance	Parsnip
7	07-07	Parsnip Caribou Recovery Trial (Funded Project - MoE)	Parsnip
	07-08	Mustelid Habitat Supply Modeling (MoF, CANFOR, ABIT, MoE)	Watershed
	07-09	Reservoir Osprey Surveys	Finlay/Parsnip
	07-10	Project Evaluation (Fisher Project)	n/a
	07-11	Report Writing/Publications	n/a

Collaborators are listed in brackets following the project name with the following multi-collaborator exceptions:
"Funded Projects" are projects funded by the PWFWCP but administered and conducted by other agencies.

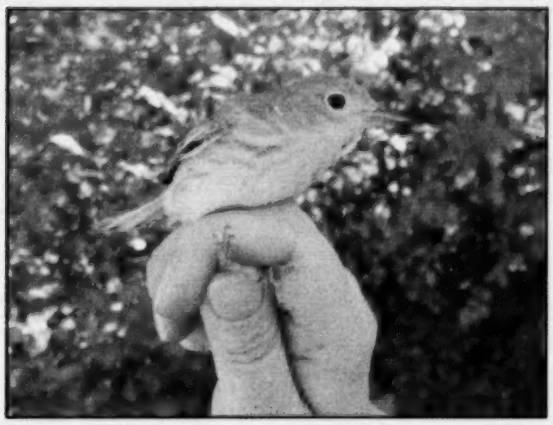
WILDLIFE PROJECT SUMMARIES

1. MACKENZIE MIGRATORY BIRD MONITORING (FUNDED PROJECT) (#07-01)

(This project is administered and delivered by the MNO.)

Project Objectives: To determine the population status and trends of neotropical migratory songbird populations in the northern Rocky Mountain Trench, and to identify those species that may be at risk from habitat loss and degradation. This is a long-term initiative of the Canadian Wildlife Service to monitor trends of songbird populations throughout North America, to which the PWFWCP contributes annual funding support.

2007/08 (Yr 13 of 18): The mist-nets and banding station at Mugaha Marsh were re-established in July and two full-time staff were hired for the fall migration season. Volunteers from the MNO, other organizations, and the general public, provided assistance on a full-time basis. In addition to capturing and banding birds, volunteers conduct bird surveys, enter and verify data, prepare an annual report, raise funding, hire and coordinate master banders and volunteers, and maintain the banding lab, trailer, boardwalks, nets, and net-lanes. Between 19 July and 23 September, 3,092 birds of 62 different species were banded at the station making it the 4th best year (of 13) in terms of numbers of birds, and 6th best for species. The highest number of birds was captured on 4 August (143) and the lowest on 19 September (13). The most commonly banded species were the Pine Siskin (360), Northern Waterthrush (328), Ruby-crowned Kinglet (283), American Redstart (276), Common Yellowthroat (177), Yellow Warbler (150) and Swainson's Thrush (145). The CWS continued work on isotope analysis of feathers collected from captured birds, and investigating specific relationships between migratory birds and Williston Reservoir water levels.



Yellow Warbler

American Redstart

2. NABESCHE GOATS & LICKS (#07-02)

Project Objectives: To improve the distribution of minerals throughout the range of suitable mountain goat terrain in the Nabesche River drainage through the establishment of artificial mineral licks, and as a result, expand the current range and population of goats in the drainage.

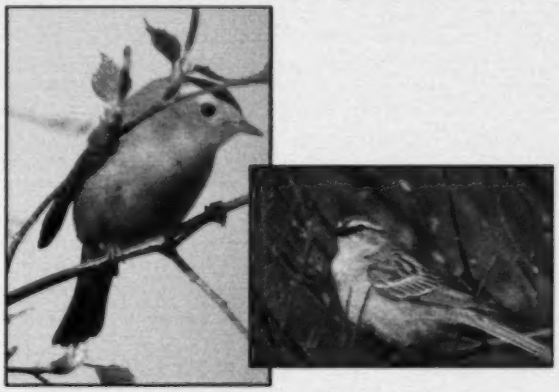
2007/08 (Year 10 of 11): Treatment sites were replenished with salt blocks (25/site) in early July 2007 shortly after the snow melted from alpine locations. An assessment of treatment sites, and an aerial survey to determine the distribution and abundance of mountain goats in the study area, is scheduled for September 2008.

Although many natural mineral licks are found in valley bottoms, the artificial licks were established in alpine locations to improve the likelihood that goats would actually find them.

3. DONNA CREEK FORESTRY/BIODIVERSITY PROJECT (#07-03)

Project Objectives: To develop alternative forest harvesting techniques designed to benefit wildlife that utilise tree cavities (e.g. woodpeckers, red-breasted nuthatch, marten), and to monitor wildlife use of the harvested treatments at successive seral stages (i.e. approx. every 10 years) over the next 60 to 100 years.

2007/08 (Year 16 of ongoing): This project was initiated in 1991 and 1992 with the harvesting of 3 treatment cutblocks in the Donna Creek drainage. Within these cutblocks, 3-metre high stubs and ¼-hectare "tree islands" were retained in various combinations in the 4 quadrants of each cutblock. Old-growth forest and conventional clearcut areas were identified as controls to compare to these treatment areas. Phase I (early-seral stage) monitoring occurred in 1995 and 1996 and included intensive bird surveys and stub assessments. Phase II (shrub-seral stage) of the project was conducted in 2006 and 2007, which included a repeat of the intensive bird surveys and stub assessments conducted in Phase I. Final reports documenting the Phase II breeding bird cavity nester surveys, and comparing these data to the Phase I findings, were drafted. General bird diversity appeared to be similar to Phase I but cavity nesters were scarce and only 3 active cavity nests were found during Phase II. Data from the stub retention and decay assessments were compiled in preparation for analyses.



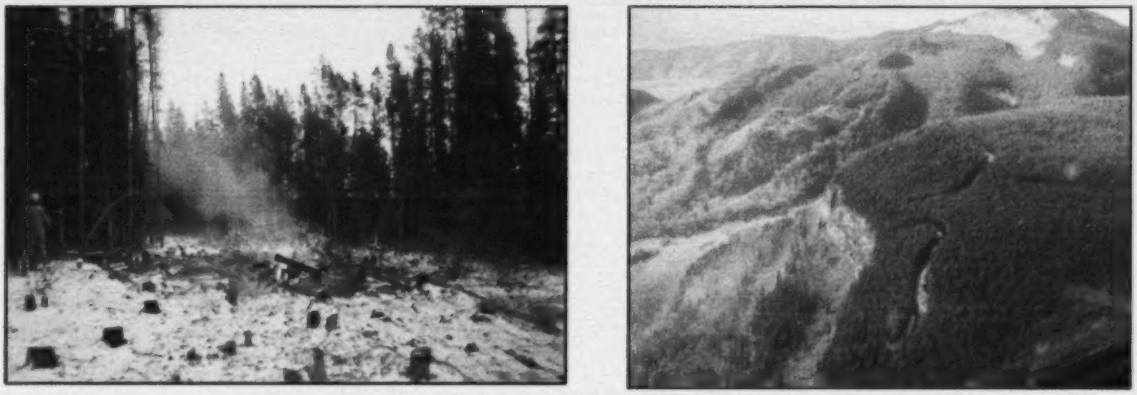
The Wilson's Warbler (left) and Chipping Sparrow were two of the most common species observed in 2006 and 2007.

Over 2,000 stubs were visited to identify if they were still standing and if they had a cavity present. A 20% sample of these stubs were also assessed for specific decay characteristics.

4. PEACE ARM PRESCRIBED BURNS (#07-04)

Project Objectives: To enhance forage for ungulates (primarily Stone's sheep and elk) and bears, and to provide foraging and breeding habitat for many wildlife species that require early seral habitats. The objective of the current "Branham Cliff" burn is to convert conifer adjacent to East Branham Cliffs to expand the grassland area for the southernmost wintering population of Stone's sheep in the province.

2007/08 (Ongoing): Two fireguards along the top of Branham Cliffs were manually created in 2003, and debris was piled for subsequent burning which was attempted on several occasions but was only partially successful due to weather conditions. Burning of the piles was successfully conducted in 2007, and the fireguards are now completed. The timber within the fireguards adjacent to the cliffs will be burned using a conventional helicopter/drip-torch system in spring 2008. Branham Cliffs is a primary winter and lambing range for Stone's sheep ewes in the Dunlevy Herd. This burn will create additional grassland forage immediately adjacent to the cliff's escape terrain.



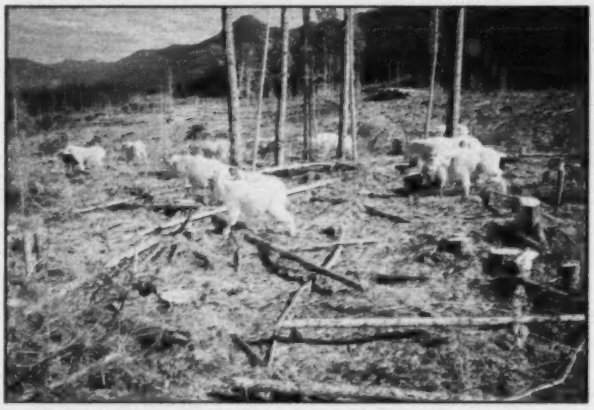
Fireguards were completed along the top of East Branham cliffs (West Branham cliffs in the background).

5. OSPIKA GOAT MINERAL LICK STUDY (#07-05)

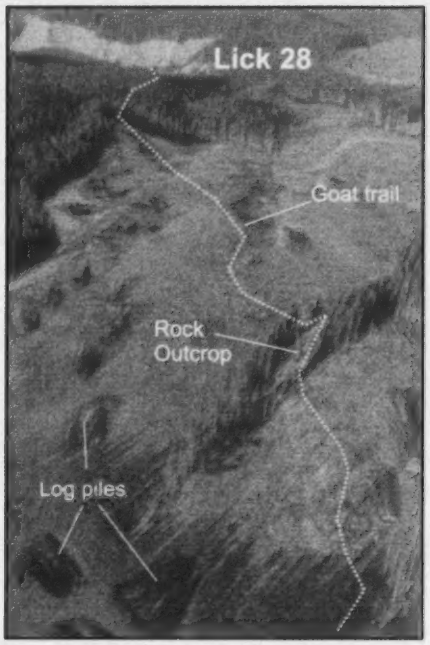
Project Objectives: To determine the impacts of 2 different forest harvesting options on mountain goat behaviour related to use of low-elevation mineral licks and trails. The first treatment, which occurred after the first year of monitoring, involved retention of a forested buffer along the goats' main access trail to one of the mineral licks when the area was logged. The second treatment occurred after the 4th year of monitoring and involved the removal of the forested buffer.

2007/08 (Yr 6 of 7): The use of 4 low-elevation mineral licks by 18 radio-collared goats was monitored again between April and November by remote telemetry stations; sites were visited and data were downloaded approximately monthly. Remote cameras along the trail were not used in 2007 as in the previous 5 years of the study. The cameras were found to provide little valuable information after the forested buffer strip was removed in November 2005 since goats showed much less fidelity to the trail once the whole area was clearcut. Collared goats were also monitoring biweekly during the mineral lick season (Apr-Nov) by fixed-wing aircraft. This year (2007) was the second year of monitoring after the forested buffer strip along the access trail to Lick 28 was harvested, and the last year of field data collection on the project. Preliminary data suggests that goats continued coming to the lick after the buffer strip was removed, but they showed less fidelity to the original trail route. An increase in the numbers of other ungulates (moose, elk, and deer) and predators (grizzly bears, black bears, and wolves) were observed by remote cameras in 2006, likely because the clearcuts provided a new food source. A formal

response from the PWFWCP to proposed mineral exploration on the Frank Range (core year-round range for goats using Lick 28) was again developed (similar to 2006); the exploration work did commence but not until September 2007. The last telemetry station download was completed in November 2007, and the stations will be permanently dismantled in spring 2008.



Mountain goats crossing the clear-cut near Lick 28 to access the valley-bottom mineral lick.

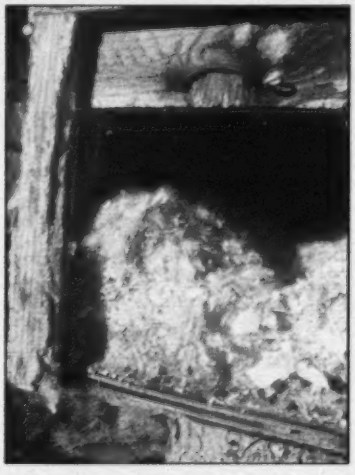


The goat trail to Lick 28 after the forested buffer strip along the trail was removed.

6. WETLANDS ENHANCEMENT MAINTENANCE (#07-06)

Project Objectives: To ensure previously established waterfowl nesting structures are maintained in good condition at wetland enhancement sites.

2007/08 (ongoing): Since 1991, enhancements have been conducted at 17 wetland sites in the Parsnip drainage to increase nesting sites for waterfowl. A total of 53 nest boxes, 19 floating islands, and 3 nesting tunnels have been established. In 2007, maintenance activities not completed in 2006 were completed. Maintenance activities occur every 3-5 years.



Remnants of a successful nest are evident in a nest box at 60 Km Marsh.

A new floating island was established at Rocky Marsh for nesting Canada geese or other waterfowl.

7. PARSNIP CARIBOU RECOVERY TRIAL (FUNDED PROJECT) (#07-07)

(This project is administered and conducted entirely by MoE.)

Project Objectives: To assist with the recovery of threatened caribou populations in the Southern Mountains National Ecological Area by evaluating the feasibility of increasing the Parsnip Caribou Herd population by reducing moose numbers in the area (using increased hunter harvest) which should result in fewer wolves and less predation on caribou.

2007/08 (Yr 2 of 4): Moose, caribou and wolves were radio-collared, and individuals and populations were monitored throughout the year. In fall 2007, 23 moose were captured and fitted with VHF collars. The January 2008 moose population survey determined that numbers had declined to ~70% of the population estimate 2 years earlier. The low bull:cow (36:100) and calf:cow (6:100) ratios are also considered consistent with a decline in moose numbers. Moose hunting permits and season length were increased again for the second season, but preliminary data suggest that the kill did not increase with more permits being issued and therefore hunter success was lower. The decline may be attributed to other factors such as deep snow conditions in the winter of 06/07. Three of the 16 radio-collared caribou died (due to bear predation, wolf predation, and an unknown cause), and caribou population surveys were conducted in October 2007 and March 2008. The population estimate in March 2008 (156 animals) was much lower than that estimated in March 2007 (207 animals) which was even lower than the March 2006 estimate. Additional wolves were captured in 2007/08 bringing the total to 19 (14 with VHF collars, 5 with GPS collars). Four wolves died and one left the study area this year. This project was initiated by MoE in 05/06, but taken on as a PWFWCP project in 06/07 ("Year 1") with funding provided primarily by the PWFWCP.

It is thought that the decline in many woodland caribou populations in BC can be attributed to the increase in moose throughout their range, which consequently supports a larger wolf population. Caribou are more vulnerable to wolf predation since they are smaller than moose.

8. MUSTELID HABITAT SUPPLY MODELING (#07-08)

Project Objective: To assist in the development of habitat supply models through a series of workshops, that will provide a tool for monitoring mustelid habitat across the landscape, and thus direct sustainable forest-management practices that benefit (i.e., minimize the impact or enhance) mustelid habitats.

2007/08 (Year 1 of 2): This project was being spearheaded by Scott McNay (Wildlife Infometrics, Mackenzie) with funding support requested from the Forest Science Program (FSP) and the Habitat Conservation Trust Fund (HCTF). No funding was received so workshops were cancelled.

9. RESERVOIR OSPREY SURVEYS (#07-09)

Project Objective: To monitor the population status and number of nests for ospreys breeding adjacent to the Parsnip and Finlay Reaches of the Williston Reservoir.

2007/08 (Year 12 of ongoing): Helicopter surveys to re-assess the abundance and productivity of breeding ospreys and the availability and distribution of nest sites along the Parsnip and Finlay Reaches was deferred to 2008/09 due to higher priority activities necessitating staff time.

10. PROJECT EVALUATION (FISHER PROJECT) (#07-10)

Project Objectives: To review a project or suite of projects to ensure achievement of the PWFWCP strategic objectives related to evaluation and accountability, and to ensure that the PWFWCP is effectively addressing strategic priorities identified for the Wildlife Sub-program. The project selected for 2007/08 was the Fisher Habitat Use Project.

2007/08 (Yr 1 of 1): The evaluation of the Fisher Habitat Use Project was deferred to 2008/09.

11. DATA ANALYSES/REPORT WRITING (#07-11)

Project Objectives: To analyse data and complete reports from previous fiscal projects including the Fisher Habitat Use, Peace Arm Stone's Sheep, and Caribou Technical Analysis projects.

2007/08 (Ongoing): No backlog reports were completed this fiscal. Drafts of all chapters for the 5-year Fisher Habitat Use Project final report were prepared and were reviewed in-house. Selected chapters were also sent for external review. Final edits and reviews are ongoing. Analysis of the 6-year dataset for the Peace Arm Stone's sheep continued, and report sections were drafted. The final report will be completed in 2008. A consultant's report synthesizing the existing technical information on the Wolverine and Chase Herds (Caribou Technical Analysis project) was drafted, and the final report will be completed in 2008.

FINANCIAL SUMMARIES

By: Mari D. Wood

COMMUNITY CONSULTATION AND INFORMATION

The available monies for Community Consultation and Information (CCI) were $160,496 (07/08 base budget of $60,000 plus $100,496 carry-over from 06/07). The budget for 07/08 activities was estimated at $113,250 of which $57,654 was spent on tasks primarily delivered by BCH's Community Relations department (Table 1). [PWFWCP staff wages on CCI activities are not included in these amounts, and are accounted for under the Fish and Wildlife program budgets respectively, see Tables 2 and 3.] The Westland Knowledge Network Program and DVD was not completed thus no costs were incurred, and Natureline expenditures were very low since no issue was actually published in 07/08. The Website Report Descriptions and Program Signs for Dinosaur, Dunlevy and Mugaha were initiated but completion was deferred to 08/09. Funds remaining at the end of fiscal were $102,842 of which $85,010 were required for Steering Committee activities (see next section below), and $5,000 were carried over to facilitate completion of the Program Signage. Unallocated monies remaining at the end of fiscal were $12,832.

Table 1. Detailed Community Consultation and Information expenditures for 2007/08.

#	SPECIFIC PROJECT	Amount Budgeted	Amount Expended[1]
1	Natureline	14,000	1,161
2	Fish Species of BC	20,500	18,498
3	FN & Public Consultation	25,000	13,278
4	New Releases & Media Interviews	2,000	1,519
5	Website Updating & Maintenance	6,500	2,150
6	Westland Knowledge Network Program & DVD	20,000	0
7	Fishing Regulations Ad	1,500	380
8	Hunting Regulations Ad	1,500	350
9	Information Dissemination	250	1,278
10	UNBC Lecture Series	3,750	2,395
11	Website Report Description Updates	5,500	1,000
12	Signs – Dinosaur, Dunlevy, & Mugaha	7,000	2,799
13	Donations/Sponsorship	4,000	4,075
14	Promotional Items	1,750	8,771
	TOTALS	**$113,250**	**$57,654**

[1] "Amount Expended" includes operational costs, BCH Community Relations staff wages, and consultant costs. Expenditures per project are approximate since staff and consultant wages were not tracked on a per project basis throughout the year.

STEERING COMMITTEE PLANNING MEETINGS AND FIRST NATIONS INVOLVEMENT

No formal budget was set up for SC Planning Meetings and First Nations Involvement for 07/08. Unspent funds from the Community Consultation and Involvement budget were used to cover these expenditures. The cost for the June Strategic Implementation Planning meeting was $16,314, while the costs for 2 Steering Committee meetings (October 2007 and February 2008) and one First Nations only meeting (November 2007) amounted to $79,896 for a total 07/08 expenditure of $96,210.

FISH PROGRAM

Funds available for the Fish Program in 2007/08 were $679,250 plus $154,528 carry over for a total $833,778, and expenditures during the fiscal year totalled $652,825 (Table 2). Projects accounted for $353,165 or 54% of the expenditures. Administration costs were $115,343 (18%) which was slightly lower than budgeted because the accounting of some activities was shifted from Administration to other categories. Costs spent on Community Consultation and Information through the Fish budget directly (i.e. primarily staff wages on CCI activities; see Table 1 in previous section for expenditures by BCH's Community Relations department) were $29,663 (5%). Staff time spent on Administration was 166 days (23%), PST 259 days (35%), CCI 60 days (8%), and Projects 248 days (34%). Carryover funds at the end of the year were $181,250, which will be available for 2007/08.

Table 2. Detailed Fish Program budget expenditures for the 2007/08 fiscal.

#	SPECIFIC PROJECT	PROJECT COSTS[1]	CATEGORY TOTALS	% Budgeted	% Expended
	ADMINISTRATION[2]		115,343	21%	18%
	PLANNING, SAFETY & TRAINING[3]		154,654	15%	24%
	COMMUNITY CONSULTATION & INFO[4]		29,663	2%	5%
	PROJECTS		353,165	62%	54%
1	Project Maintenance	20,846			
2	Stocking Program	11,366			
3	Small Lake Stocking Evaluations	21,202			
4	Report Writing (Previous Years)	12,350			
5	Classroom Kokanee	16,756			
6	Dinosaur Reservoir Habitat Improvements	39,090			
7	Dinosaur Reservoir Fish Assessment	15,525			
8	Parsnip Grayling Index	59,666			
9	Brassy Minnow	7,868			
10	Bull Trout Redd Count Indexing	15,808			
11	Kokanee Spawner Index Stream Survey	19,518			
12	Grayling Management & Recovery Plan	595			
13	UNBC Research Lecture Series	4,360			
14	Grayling Fry Distribution in Finlay Watershed	62,084			
15	Freshwater Fishes of BC Book	5,767			
16	Foreshore Enhancement Project	0			
17	Genetic Analysis of Grayling Popn Structure	7,656			
18	Genetic Analysis of Kokanee Popn Structure	480			
19	Hydroacoustic Research & Development	66			
20	Fish Species Distribution Maps	1,371			
21	Dinosaur Woody Debris Evaluation	7,580			
22	Gravel Hill Creek Habitat Enhancement	23,210			
		353,165	**$652,825**		**100%**

[1] Project Costs: includes operational costs, staff wages and travel, equipment & supplies, and vehicle costs.
[2] Administration: includes staff wages, office and warehouse lease, MOE administrative support, computers, phones, office supplies, and vehicle costs.
[3] Planning, Safety & Training: includes staff wages & travel, Technical Committee travel, training courses, and vehicle costs.
[4] Community Consultation and Information: includes program staff wages & travel, and vehicle costs; does not include monies spent through BCH Community Relations department.

WILDLIFE PROGRAM

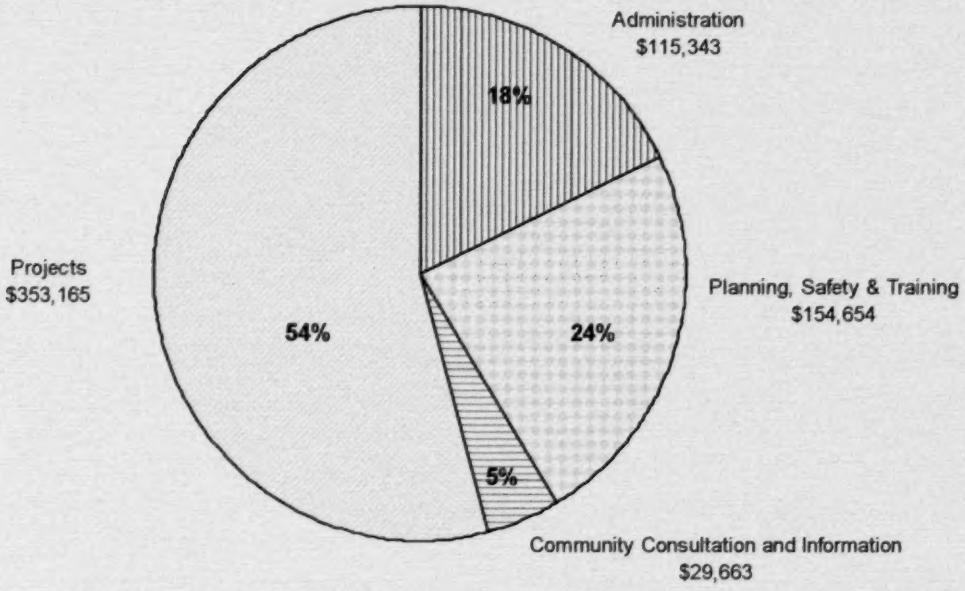
The basic annual Wildlife Program budget in 2007/08 was $555,750 which together with an additional $326,244 in carry-over funds from 2006/07, resulted in a total available fiscal budget of $881,994. Wildlife program expenditures in 2007/08 amounted to $580,635, of which $422,176 (73%) was spent on wildlife research, enhancement, and evaluation projects (Table 3). Costs spent on Community Consultation and Information through the Wildlife budget directly (i.e. primarily staff wages on CCI activities; see Table 1 for expenditures by BCH's Community Relations department) were $30,074 (5%). Staff time spent on Administration was 63 days (14%), PST 127 days (28%), CCI 62 days (14%), and Projects 195 days (44%). Carry-over of funds from 2006/07 plus the under-expenditures on some 07/08 budgeted projects and the deferral of other projects to 08/09, resulted in a cost savings of $301,359 which was carried over to the 2008/09 fiscal.

Table 3. Detailed Wildlife Program budget expenditures for the 2007/08 fiscal.

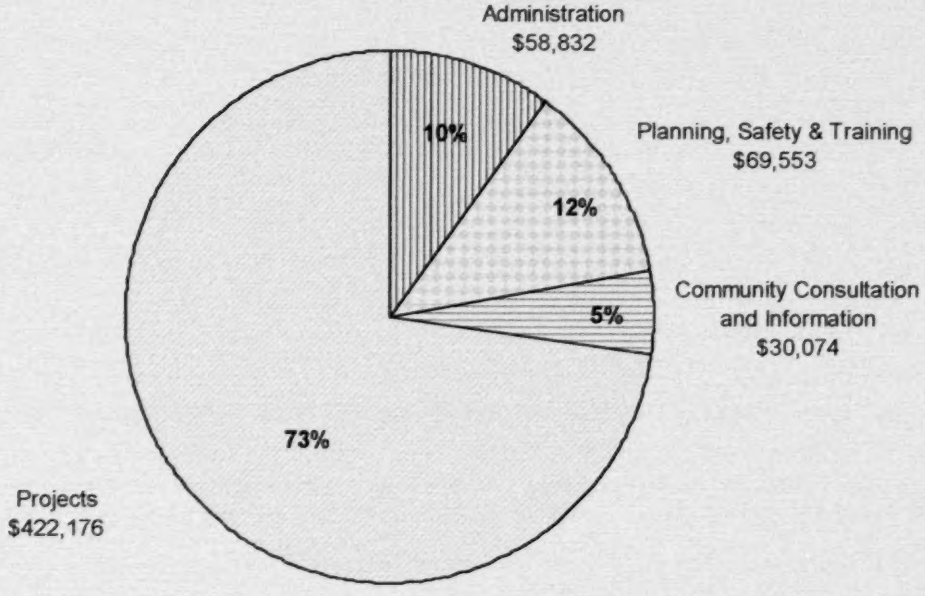
#	SPECIFIC PROJECT	PROJECT COSTS[1]	CATEGORY TOTALS	% Budgeted	% Expended
	ADMINISTRATION[2]		$58,832	8%	10%
	PLANNING, SAFETY & TRAINING[3]		$69,553	8%	12%
	COMMUNITY CONSULTATION & INFO[4]		$30,074	2%	5%
	PROJECTS		$422,176	82%	73%
1	Mackenzie Migratory Bird	$7,200			
2	Nabesche Goats & Licks	$13,884			
3	Donna Creek Forestry/Biodiversity	$149,606			
4	North Peace Prescribed Burns	$16,393			
5	Ospika Goat/Mineral Lick Project	$76,257			
6	Wetlands Enhancement Maintenance	$5,154			
7	Parsnip Caribou Recovery Trial	$133,553			
8	Mustelid Habitat Supply Modeling	0			
9	Reservoir Osprey Surveys	177			
10	Project Evaluations – Fisher Project	0			
11	Data Analyses and Reporting	$19,952			
			$580,635		**100%**

[1] Project Costs: includes operational costs, staff wages and travel, equipment & supplies, and vehicle costs.
[2] Administration: includes staff wages, office and warehouse lease, MOE administrative support, computers, phones, office supplies, and vehicle costs.
[3] Planning, Safety & Training: includes staff wages & travel, Technical Committee travel, training courses, conferences, and vehicle costs.
[4] Community Consultation & Information: includes staff wages & travel, and vehicle costs; does not include hard costs spent through BCH Community Relations department.

FISH PROGRAM 07/08 EXPENDITURES



WILDLIFE PROGRAM 07/08 EXPENDITURES



PWFWCP 07/08 FINANCIAL SUMMARY

Total expenditures for the PWFWCP in 07/08 amounted to $1,387,324, with $775,341 (56%) devoted to Fish and Wildlife projects.